EARTH STATION ANTENNA

3.7 Meter ESA

Like all ASC Signal earth station antennas, the 3.7 Meter Earth Station Antenna provides high gain and exceptional pattern characteristics.

This antenna system is designed to address the stringent requirements of both the television broadcast industry and telecommunications network operators who demand unsurpassed flexibility and electrical performance in high-quality, cost-effective, and reliable packages.

The electrical performance and exceptional versatility provides the ability to configure the antenna with your choice of linearly- or circularly- polarized 2- or 4- port combining networks. That versatility is provided at the time of initial purchase, as well as in the future, as your satellite communication requirements evolve.

This antenna system is used worldwide in broadcast applications and high density data, voice and communications networks. The ASC Signal 3.7 meter earth station antenna features a computer-optimized dual reflector Gregorian optics system and close-tolerance manufacturing techniques.

This combination provides extremely accurate surface contour resulting in exceptionally high gain and closely controlled pattern characteristics. ASC Signal earth station antennas provide maximum durability with minimal maintenance.

Features

- Self-aligning main reflector
- 3 year warranty on all structural components
- Eutelsat Type Approval, 2-Port Ku-band EA-A002
- Asiasat Approval, Type 2
- Apstar Approval
- INTELSAT® Approval, E-2 at Ku-band: A12A00, 2-Port; IA12B00, 4-Port
- U.S. FCC Regulation 25.209 at Ku-band
- Russian Homologation Certificate OC/1-AO-136
- C, X, Ku, K Band Capabilities

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Design Standards

Reflector	Aluminum painted with highly diffusive white paint
Ground Mount	Hot-dipped galvanized steel, per ASTM-A123 for structural steel.
Hardware	Sizes ≤ 3/8 in (9.5mm), stainless steel, passivated per MIL-F-14072-E300 Sizes ≥ 3/8 in (9.5mm), hot-dipped galvanized stainless steel, passivated per ASTM-A123

Environmental Performances

Operating Temperature	-40° to 52°C (-40° to 125°F)
Seismic (Earthquake)	1 G Vertical and Horizontal acceleration. Equivalent to a Richter Magnitude 8.3, and Grade 11 on the modified Mercalli Scale
Operational Winds	45 mph (72 km/h) Gusts to 65 mph (105 km/h)
Survival Winds	125 mph (200 km/h) in any position of operation
Rain	4 in (102 mm) per hour
Solar Radiation	360 BTU/hr/ft^2 (1135 Watts/m$^{2)}$
Relative Humidity	100%
Shock and Vibration	As encountered by commercial Air, Rail and Truck shipment.
Atmospheric Conditions	As encountered by Moderately Corrosive Coastal and Industrial Areas.

Mechanical Performances

The 3.7m Antenna mechanical general specifications and performances are listed in below table. Additional information, dimensions and layout may be provided by ASC Signal on a case-by-case basis.

Optics Type	Dual Reflector Gregorian
Reflector Material	Precision-Formed Aluminum
Reflector Segments	2
Mount Type	Az over El, Pedestal Mount

Antenna Pointing Range, Coarse/(Continuous)	
Elevation:	0-90° (90°)
Azimuth:	180° (120°)
Polarization	180° (180°)

Hub/Enclosure Dimensions	
Diameter	1.22 m (48 in)
Depth	0.61 m (24 in)
	optional 0.83m (32.5 in)

Shipping Information

Packing Options	
Standard Commercial Domestic Pack	Included
Ocean Export Pack - For non-containerized, packed for seal against salt water spray	OCEANSHP-SML
Air Export Pack - For freighter aircraft shipments. Lower deck AirPack requires specialized bids	AIR EXPORT PACK-SML
Container Packaging	CNTPCK-SML

Required Shipping Container	
Standard 20 ft land/sea container	Quantity 1

Shipping container information is given for basic configuration and may vary depending on the selected options, please contact ASC Signal for specific container loading plan.

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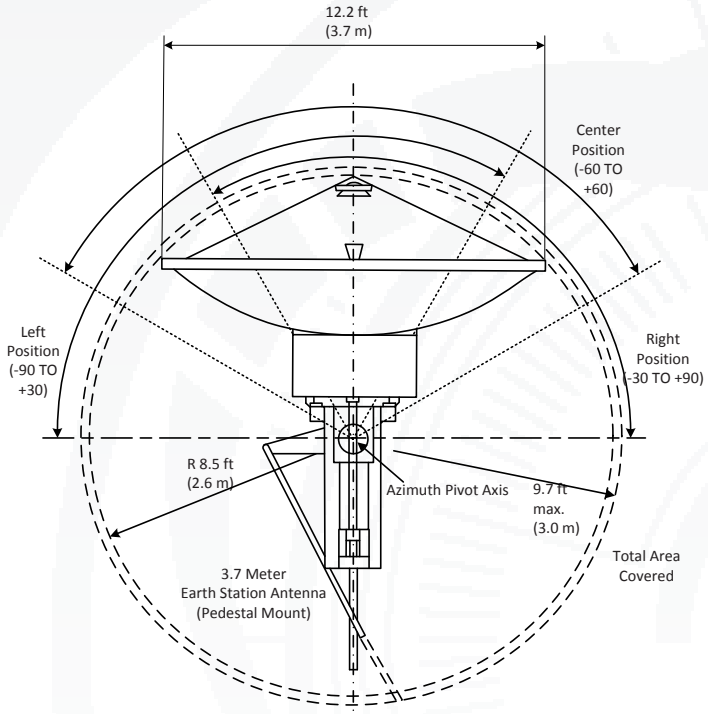
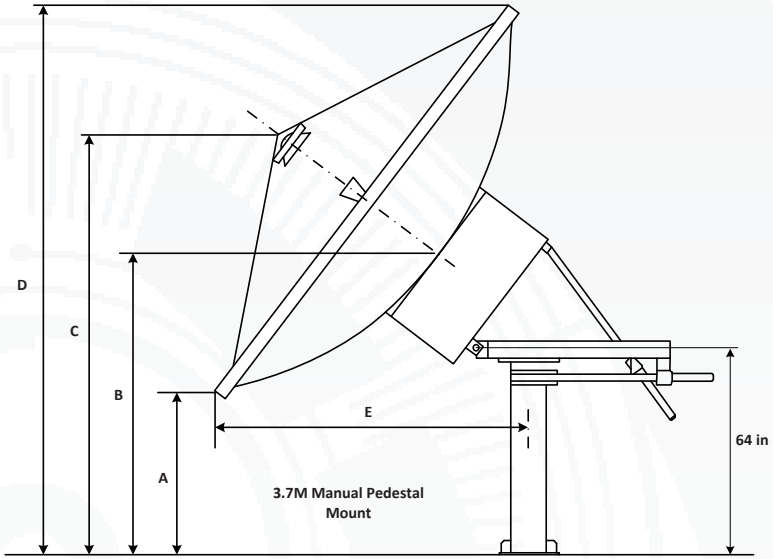
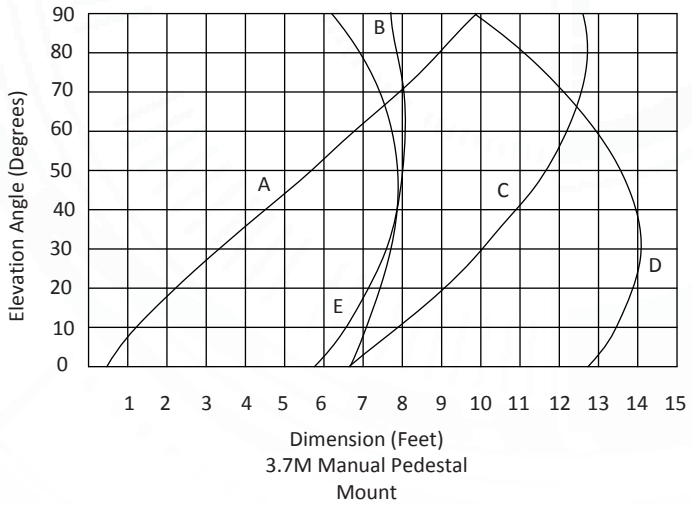
Dimensional Drawings Non Motorizable Mount







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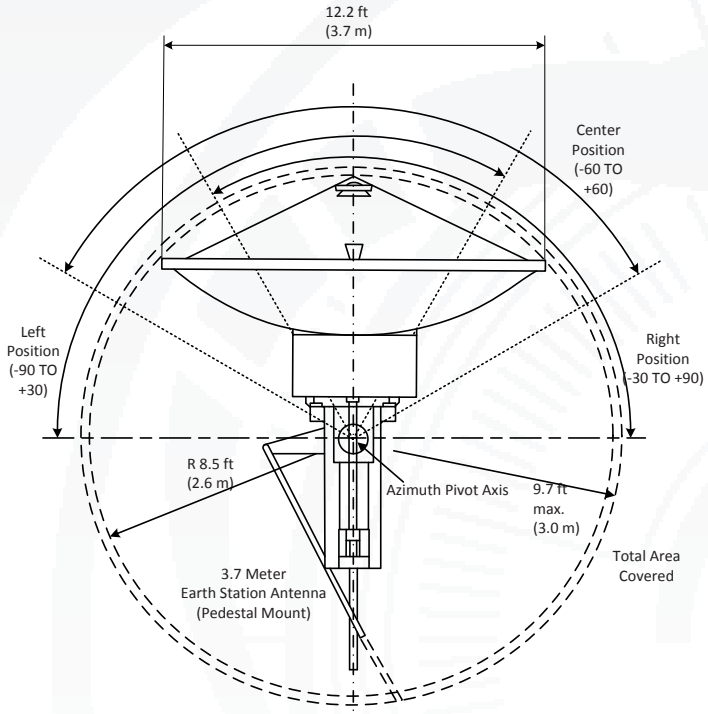
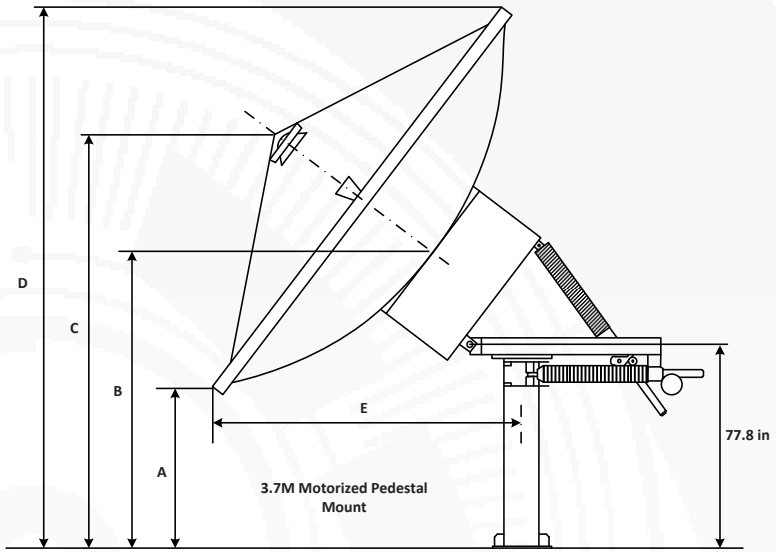
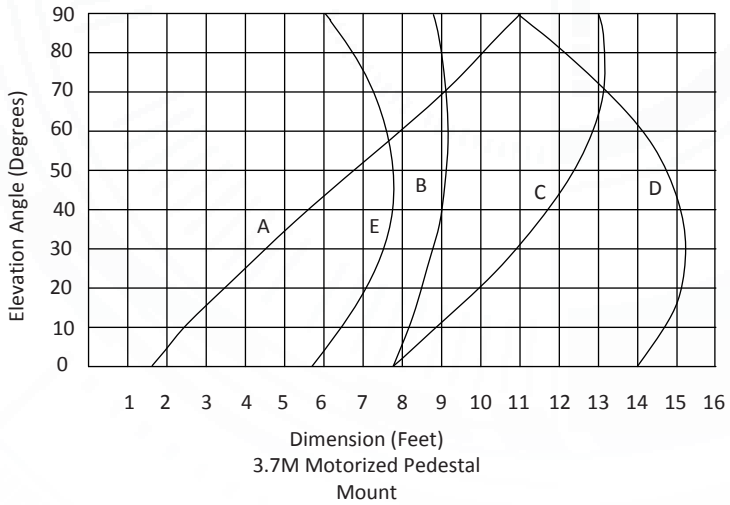
Dimensional Drawings Motorizable Mount







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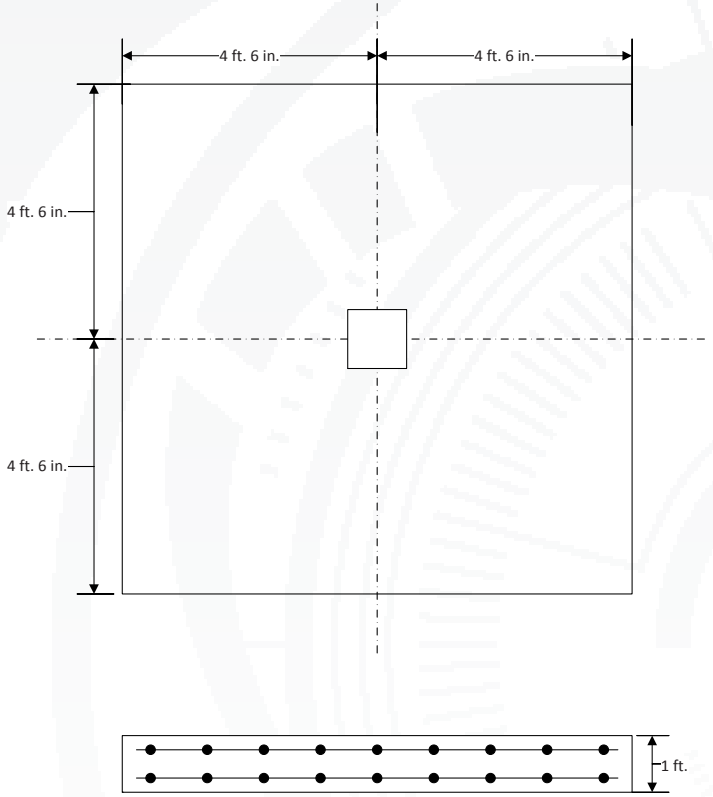
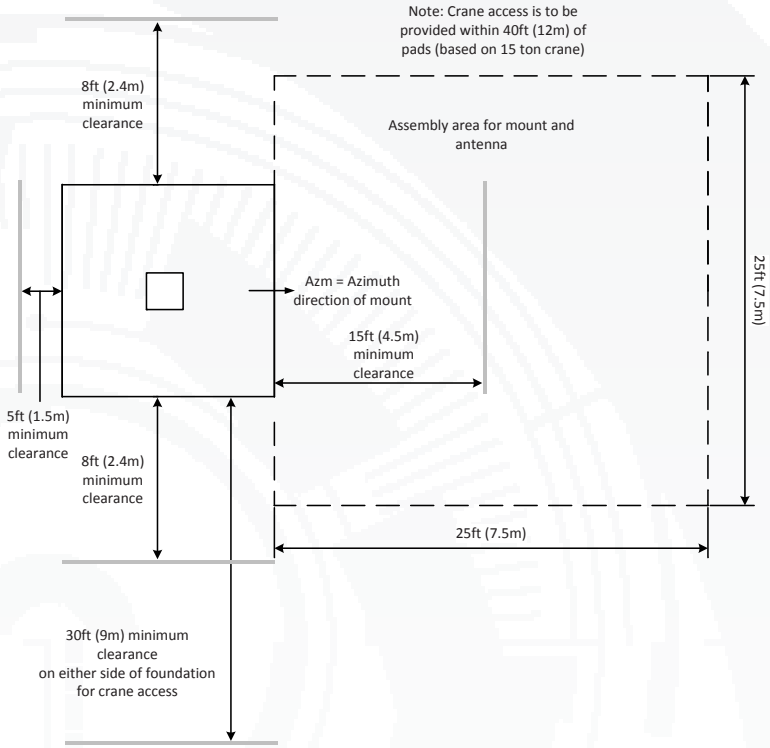
Foundation, Typical Slab





Foundation information are provided in bulletin 37835A, please contact ASC Signal.

Soil Bearing Capacity,	2000 lb/ft² (9770 kg/m²)
Reinforcing Steel,	194 Lbs (88 Kilograms)
Concrete Compressive Strength,	3000 psi (211 kg/cm²)
Foundation Size:	(for specific standard soil and typical design)
Length	9 ft (2.74 m)
Width	9 ft (2.74 m)
Depth	1 ft (0.305 m)
Concrete Volume	3 yd³ (2.3 m³)
NOTE: Other typical foundation designs are available. Soil borings and foundation analysis should be performed by a qualified civil engineer.	

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Motor Drive Speed Summary

	Variable	
Azimuth	0.5°/s	0.05°/s
Elevation	0.5°/s	0.05°/s
Polarization	1°/s	

Motorization

Two motorization systems are available for this antenna: the NGC tracking system that can support Steptrack, Smartrack and Ephemeris orbital tracking or the NGC-LTE non-tracking application.

Motor Kit	
Azimuth/Elevation Motor Kit	NGC-MK4

Polarization Drive Kit (DC Step Motors)	
Standard Temperature (> -20°C)	NGC-PK5DRA

Outdoor Unit Controller (Tracking)	
Power 200 - 230 VAC, 3 Phase 50/60 Hz	NGC-ODU-208-3
Power 380 - 460 VAC, 3 Phase 50/60 Hz	NGC-ODU-380-3

Outdoor Unit Controller (Non-Tracking)	
Power 200 - 230 VAC, 3 Phase 50/60 Hz	NGC-ODU-LTE-208-3
Power 380 - 460 VAC, 3 Phase 50/60 Hz	NGC-ODU-LTE-380-3

Antenna controller, motorization and options are detailed in specific bulletins, please contact ASC Signal..

Antenna Configurations

X, Ku, K Band Earth Station Antennas	
Manual Pedestal Mount.	ES37PK-1
Motorizable Mount without Az/El Jackscrews.	ES37MPK-1
Motorizable Mount with Az/El Jackscrews.	ES37MPJK-1

C Band Earth Station Antennas	
Manual Pedestal Mount.	ES37PK-EC-1
Motorizable Mount without Az/El Jackscrews.	ES37MPK-EC-1
Motorizable Mount with Az/El Jackscrews.	ES37MPJK-EC-1

Motorization and NGC Options

Indoor	
NGC-IDU	NGC Rack Mounted Antenna Controller W/LCD Touch Panel
NGC-001	NGC-IDU Analog Telephone Modem
NGC-002	NGC-IDU Spectrum Analyzer Card - Analog
NGC-003	NGC-IDU DVB Receiver Card
NGC-004-02	NGC IDU, L-Band Internal Beacon Receiver
NGC-006	NGC-IDU Emergency Stop Button
NGC-007	NGC-IDU 10 Mhz Reference Source
NGC-008	NGC-IDU Redundant Power Supply
NGC-009	NGC-IDU Rack Slides
NGC-101	NGC-IDU Step Tracking Software
NGC-102	NGC-IDU Smartrack Software
NGC-103	NGC-IDU Predictive Track Software
NGC-104	NGC-IDU Full Tracking Capability Software
NGC-106	NGC-IDU Remote Access Software Package
NGC-107	NGC-IDU Spectrum Analyzer Enhanced User Interface
NGC-108	Receive Pattern Test Tool
NGC-109	Redundancy Control Software
NGC-115	Uplink Power Control Software Function
NGC-ULPC-INTFC	Uplink Power Control System Sincle Channel
NGC-ULPC-INTFC-2	Uplink Power Control System Dual Channel

Outdoor	
NGC-201	NGC ODU Low Temperature Kit (-40 C)
NGC-202	NGC ODU High Temperature Kit (+60 C)
NGC-205	NGC ODU Polarization Drive Interface
NGC-206	NGC Exterior Emergency Stop Button
NGC-207	Pre Movement Alert Warning Light And Announcator
RED11-x	Hub Mounted 1:1 LNA/LNB Redundancy Plate
RED12-x	Hub Mounted 1:2 LNA/LNB Redundancy Plate

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Feed Matrix

C- BAND FEED SYSTEMS	PORT	CP	LP	RX 3.625 - 4.2 GHz	TX 5.850 - 6.425 GHz
2CPC-37-109	2	X	X	X	X
2CPCR-37-109	2	X		X	

X- BAND FEED SYSTEMS	PORT	CP	RX 7.25 - 7.75 GHz	TX 7.9 - 8.4 GHz
2CPX-37	2	X	X	X

Ku- BAND FEED SYSTEMS	PORT	LP	RX 10.95-12.75 GHz	RX 10.95-12.25 GHz	RX 10.7 - 12.75 GHz	RX 10.7 - 13.25 GHz	RX 10.7 - 11.7 GHz	TX 12.75-13.25 GHz	TX 14.0 - 14.5 GHz	TX 13.75-14.8 GHz
2LPK-37-W	2	X	X						X	
2LPKR-37-W	2	X	X							
2LPKUNV-37	2	X				X				X
4LPK-37-W	4	X		X					X	
4LPKUNV-37-1	4	X			X					X
4LPKUNV-37-2	4	X					X	X		X

K- BAND FEED SYSTEMS	PORT	LP	CP	RX 10.7 - 12.75 GHz	TX 17.3 - 18.4 GHz
2LPKK-37	2	X		X	X
4LPKK-37	4	X		X	X
4CPKK-37-206	4		X	X	X

For redundant application, LNA support kits are available for each of the above feeds. Please contact ASC Signal.

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Antenna Options and Spares

Anchor Bolt and Template Kits Option	
203314	Anchor Bolt Kit for 3.7 Meter Earth Station

Azimuth and Elevation Cross Axis Waveguide Options	
1XAK-5	Ku-Band Cross Axis Waveguide Kit, 2-Port.
1XAKK-5	K-Band Cross Axis Waveguide Kit, 2-Port.
1XAX-37	X-Band Cross Axis Waveguide Kit, 2-Port.
1XPK-37	Ku-Band Polarization Waveguide Kit, 2-Port.
1XPKK-37	K-Band Polarization Waveguide Kit, 2-Port.
1XPX-37	X-Band Polarization Waveguide Kit, 2-Port.
2XAK-5	Ku-Band Cross Axis Waveguide Kit, 4-Port.
2XAKK-5	K-Band Cross Axis Waveguide Kit, 4-Port.
2XPK-37	Ku-Band Polarization Waveguide Kit, 4-Port.
2XPKK-37	K-Band Polarization Waveguide Kit, 4-Port.
2XPX-37	X-Band Polarization Waveguide Kit, 4-Port.

Heating Options	
FH4A	C-Band Feed Heater Kit
FHXA	X-Band Feed Heater
FH5A	Ku and K-Band Feed Heater
FR37A	Full-Reflector Heater Pads
WEC37R-208-100	Electric Hot Air De-Ice System, 208 VAC, 3 Phase
WEC37R-380-100	Electric Hot Air De-Ice System, 380 VAC, 3 Phase

Upgrade Options	
37CUPGK	Kit to Convert from C-Band to Ku-Band
37CUPGX	Kit to Convert From C-Band to X-Band
37KUPGC	Kit to Convert From Ku-Band to C-Band
37KUPGX	Kit to Convert From Ku-Band to X-Band

Hub Equipment Options	
EMRGYLT-115	Emergency Hub Light Kit, 115 VAC
EMRGYLT-230	Emergency Hub Light Kit, 230 VAC
FV5-115	Fan and Vent Kit, 115 VAC
FV5-220	Fan and Vent Kit, 230 VAC
FV5HV-115	High Volume Fan and Vent Kit, 115 VAC
FV5HV-230	High Volume Fan and Vent Kit, 230 VAC
FV5HV-48	High Volume Fan and Vent Kit, 48VDC
HUBHTR-230	Antenna Hub Heater, 230 VAC
HUBLCNTR-115/240	Hub Power Center, 115/240 VAC
HUBLCNTR-230	Hub Power Center, 230 VAC
HUBLT-115	Hub Light Kit, 115 VAC
HUBLT-230	Hub Light Kit, 230 VAC

Safety Options	
ANTGND-5	Foundation Installed Grounding Kit
LRK5	Lightening Rod Kit
OBWRNLT-115	Obstruction Warning Light Kit, 115VAC
OBWRNLT-230	Obstruction Warning Light Kit, 230VAC

Other Options	
207885	Elevation Handwheel Kit (2 required)
209906	Lubrication and Maintenance Kit
BRNG-374676-X	Guard, Feed Window X-band
BRNG-3746-C	Guard, Feed Window C-band
BRNG-37-K	Guard, Feed Window K-band
BRNG-37-KU	Guard, Feed Window Ku-band
FTST	Feed System Testing
TK-MAN-SML	Tool Kit, Small Manual Antennas
TK-MOT-SML	Tool Kit, Small Motorized Antennas

Environmental Systems Options	
PDKU-37-208	Precipitation Deviator Ku-band 208 VAC, 3 Phase
PDKU-37-380	Precipitation Deviator Ku-band 380 VAC, 3 Phase

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